

The Examiner is respectfully requested to amend the above-identified application as follows:

IN THE CLAIMS:

Please amend Claims 1, 6, 10, 12, 17, 20 and 21 as follows. A marked-up copy of Claims 1, 6, 10, 12, 17, 20 and 21 showing the changes made thereto, is attached. For the Examiner's convenience, all pending claims are presented below regardless of whether they are being amended herein.

1. (Twice Amended) An image recording apparatus for recording images sensed by at least two image sensing means attached to a vehicle, comprising:

first image sensing means which is arranged to have an image sensing direction agreeing with a first direction of the vehicle;

second image sensing means which is arranged at a position separated a known distance from said first image sensing means to have an image sensing direction agreeing with a second direction different from the first direction; and

recording means for, when the vehicle travels in the first direction, associating first image data sensed by said first image sensing means with second image data sensed by said second image sensing means and recording said first and second image data with information concerning a time difference based on said known distance and a velocity of the vehicle.

2. (Unamended) The apparatus according to claim 1, wherein said second direction is substantially 180° different from the first direction, and said first image sensing

means comprises a plurality of cameras, image sensing directions of which are deployed symmetrically about the first direction.

3. (Unamended) The apparatus according to claim 2, wherein straight lines on the image sensing directions of said plurality of cameras cross each other in front of said plurality of cameras.

4. (Unamended) The apparatus according to claim 1, further comprising:
third image sensing means which is arranged at a position near said first image sensing means to have an image sensing direction agreeing with a third direction different from the first direction; and

fourth image sensing means which is arranged at a position symmetrical to the third direction about a straight line pointing in the first direction.

5. (Unamended) The apparatus according to claim 1, wherein said second image sensing means comprises a plurality of cameras, image sensing directions of which point in at least two directions symmetrical about the second direction.

6. (Twice Amended) An image recording apparatus for recording images sensed by at least two image sensing means attached to a vehicle, comprising:

first image sensing means which is arranged to have an image sensing direction agreeing with a first direction of the vehicle;

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a plurality of cameras which are arranged at positions separated a known distance from said first image sensing means to have image sensing directions agreeing with a plurality of directions symmetrical about a second direction different from the first direction;

means for detecting a turn of the vehicle;

selection means for selecting the camera which points at a larger angle in a counterclockwise or clockwise direction from said plurality of cameras depending on whether the vehicle has turned clockwise or counterclockwise from the first direction; and

recording means for associating first image data sensed by said first image sensing means with second image data sensed by the camera selected by said selection means, and recording said first and second image data with information concerning a time difference based on said known distance and a velocity of the vehicle.

7. (Unamended) The apparatus according to claim 6, wherein said second direction is substantially 180° different from the first direction, and said plurality of cameras have two cameras, and the image sensing direction of said cameras cross each other on an extending line of the second direction.

8. (Unamended) The apparatus according to claim 6, wherein said plurality of cameras have first to third cameras, said first camera has an image sensing direction agreeing with the second direction, and image sensing directions of said second and third cameras are respectively turned clockwise and counterclockwise to be deployed symmetrically about the second direction, and

said selection means selects

said first camera when the vehicle travels in the first direction,
said second camera when the vehicle turns counterclockwise, and
said third camera when the vehicle turns clockwise.

9. (Unamended) The apparatus according to claim 6, further comprising:

third image sensing means which is arranged at a position near said first image sensing means to have an image sensing direction agreeing with a third direction different from the first direction; and

fourth image sensing means which is arranged at a position symmetrical to the third direction about a straight line pointing in the first direction.

10. (Twice Amended) An image database for generating a database used for building a three-dimensional image space from image sequences sensed by a plurality of image sensing means attached to a vehicle after acquisition of image data, comprising:

a first reader for reading data from a first image data memory recorded by first image sensing means pointed in a first direction;

a second reader for reading data from a second image memory recorded by second image sensing means which is arranged at a position separated a known distance from said first image sensing means to point in a second direction different from the first direction;

a third reader for reading data from a third memory which records a moving position and traveling direction of the vehicle; and

means for associating image data read by said first reader, and image data read by said second reader based on time duration information based on the known distance and a

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con Q velocity of the vehicle, with each other when traveling direction data read by said third reader indicates that the vehicle is traveling substantially straight.

11. (Unamended) The apparatus according to claim 10, wherein said second direction is substantially 180° different from the first direction, and wherein, when said second image sensing means includes two cameras having different directions,

said associating means associates image data read by said first reader and image data at a position the known distance later of those read by said second reader from the camera located at a counterclockwise or clockwise position with each other, when the traveling direction data read by said third reader indicates a clockwise or counterclockwise turn.

12. (Twice Amended) An image recording method of recording images sensed by at least two image sensing means attached to a vehicle, comprising the steps of:

arranging first image sensing means to have an image sensing direction agreeing with a first direction of the vehicle;

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contd arranging second image sensing means at a position separated a known distance from said first image sensing means to have an image sensing direction agreeing with a second direction different from the first direction;

associating, when the vehicle travels in the first direction, first image data sensed by said first image sensing means with second image data sensed by said second image sensing means and

recording said first and second image data, sensed at different times from each other, and the time difference based on said known distance and a velocity of the vehicle.

13. (Unamended) The method according to claim 12, wherein said second direction is substantially 180° different from the first direction, and said first image sensing means comprises a plurality of cameras, image sensing directions of which are deployed symmetrically about the first direction.

14. (Unamended) The method according to claim 13, wherein straight lines on the image sensing directions of said plurality of cameras cross each other in front of said plurality of cameras.

15. (Unamended) The method according to claim 12, further comprising the steps of:

arranging third image sensing means at a position near said first image sensing means to have an image sensing direction agreeing with a third direction different from the first direction; and

arranging fourth image sensing means at a position symmetrical to the third direction about a straight line pointing in the first direction.

16. (Unamended) The method according to claim 12, wherein said second image sensing means comprises a plurality of cameras, image sensing directions of which point in at least two directions symmetrical about the second direction.

17. (Twice Amended) An image recording method of recording images sensed by at least two image sensing means attached to a vehicle, comprising the steps of:

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arranging first image sensing means to have an image sensing direction agreeing with a first direction of the vehicle;

arranging a plurality of cameras at positions separated a known distance from said first image sensing means to have image sensing directions agreeing with a plurality of directions symmetrical about a second direction different from the first direction;

detecting a turn of the vehicle;

selecting the camera which points at a larger angle in a counterclockwise or clockwise direction from said plurality of cameras depending on whether the vehicle has turned clockwise or counterclockwise from the first direction; and

recording first image data sensed by said first image sensing means and second image data sensed by the selected camera in association with each other, and information concerning a

time difference based on said known distance and a velocity of the vehicle.

18. (Unamended) The method according to claim 17, wherein said second direction is substantially 180° different from the first direction, and said plurality of cameras have two cameras, and the image sensing directions of said cameras cross each other on an extending line of the second direction.

19. (Unamended) The method according to claim 17, wherein said plurality of cameras have first to third cameras, said first camera has an image sensing direction agreeing with the second direction, and image sensing directions of said second and third cameras are

respectively turned clockwise and counterclockwise to be deployed symmetrically about the second direction, and

the selection step includes the step of selecting
said first camera when the vehicle travels in the first direction,
said second camera when the vehicle turns counterclockwise, and
said third camera when the vehicle turns clockwise.

20. (Twice Amended) A recording medium of a computer program which makes a computer execute control for recording images sensed by first image sensing means which is arranged to have an image sensing direction agreeing with a first direction of a vehicle, and second image sensing means which is arranged at a position separated a known distance from said first image sensing means to have a second image sensing direction different from the first direction, said medium recording:

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first program code means for, when the vehicle travels in the first direction, recording first image data sensed by said first image sensing means and second image data sensed by said second image sensing means in association with each other based on time duration information based on the known distance and a velocity of the vehicle.

21. (Twice Amended) A recording medium of a computer program which makes a computer execute control for recording images sensed by first image sensing means which is arranged to have an image sensing direction agreeing with a first direction of a vehicle, a plurality of cameras which are arranged at positions separated a known distance from said first

image sensing means to have image sensing directions agreeing with a plurality of directions symmetrical about a second direction different from the first direction, said medium recording:

first program code means for detecting a turn of the vehicle;

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Cone second program code means for selecting the camera which points at a larger angle in a counterclockwise or clockwise direction from said plurality of cameras depending on whether the vehicle has turned clockwise or counterclockwise from the first direction; and

third program code means for recording first image data sensed by said first image sensing means, and second image data sensed by the selected camera based on a time duration based on the known distance and a velocity of the vehicle, with each other.

22. (Unamended) The recording medium according to claim 20, wherein said second direction is substantially 180° different from the first direction.

23. (Unamended) The recording medium according to claim 21, wherein said second direction is substantially 180° different from the first direction.

REMARKS

Applicants request favorable reconsideration and allowance of this application in view of the foregoing amendments and the following remarks.

Claims 1-23 are pending in this application, with Claims 1, 6, 10, 12, 17, 20, and 21 being independent. The independent claims have been amended, but Applicants submit that no new matter has been added.